09/470,467

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NEWS 1		Web Page URLs for STN Seminar Schedule - N. America
NEWS 2	Dec 17	The CA Lexicon available in the CAPLUS and CA files
NEWS 3	Feb 06	Engineering Information Encompass files have new names
NEWS 4	Feb 16	TOXLINE no longer being updated
NEWS 5	Apr 23	Search Derwent WPINDEX by chemical structure
NEWS 6	Apr 23	PRE-1967 REFERENCES NOW SEARCHABLE IN CAPLUS AND CA
NEWS 7	May 07	DGENE Reload
NEWS 8	Jun 20	Published patent applications (A1) are now in USPATFULL
NEWS 9	JUL 13	New SDI alert frequency now available in Derwent's DWPI and DPCI
NEWS 10	Aug 23	In-process records and more frequent updates now in MEDLINE
NEWS 11	Aug 23	PAGE IMAGES FOR 1947-1966 RECORDS IN CAPLUS AND CA
NEWS 12	Aug 23	Adis Newsletters (ADISNEWS) now available on STN
NEWS 13	Sep 17	IMSworld Pharmaceutical Company Directory name change to PHARMASEARCH
NEWS 14	Oct 09	Korean abstracts now included in Derwent World Patents Index
NEWS 15	Oct 09	Number of Derwent World Patents Index updates increased
NEWS 16	Oct 15	Calculated properties now in the REGISTRY/ZREGISTRY File
NEWS 17	Oct 22	Over 1 million reactions added to CASREACT
NEWS 18	Oct 22	DGENE GETSIM has been improved

NEWS EXPRESS	August 15 CURRENT WINDOWS VERSION IS V6.0c, CURRENT MACINTOSH VERSION IS V6.0 (ENG) AND V6.0J (JP), AND CURRENT DISCOVER FILE IS DATED 07 AUGUST 2001
NEWS HOURS	STN Operating Hours Plus Help Desk Availability
NEWS INTER	General Internet Information
NEWS LOGIN	Welcome Banner and News Items
NEWS PHONE	Direct Dial and Telecommunication Network Access to STN
NEWS WWW	CAS World Wide Web Site (general information)

Enter NEWS followed by the item number or name to see news on that specific topic.

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FILE 'HOME' ENTERED AT 09:36:38 ON 25 OCT 2001

=> fil reg

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	0.15	0.15

FILE 'REGISTRY' ENTERED AT 09:36:43 ON 25 OCT 2001

STRUCTURE FILE UPDATES: 23 OCT 2001 HIGHEST RN 364318-55-8
DICTIONARY FILE UPDATES: 23 OCT 2001 HIGHEST RN 364318-55-8

TSCA INFORMATION NOW CURRENT THROUGH July 7, 2001

Please note that search-term pricing does apply when conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER see HELP CROSSOVER for details.

Calculated physical property data is now available. See HELP PROPERTIES for more information. See STNote 27, Searching Properties in the CAS Registry File, for complete details:
http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf

```
=> e gustducin?
E1            2     GUSTAVITE/BI
E2            3     GUSTDUCIN/BI
E3            0 --> GUSTDUCIN?/BI
E4            2     GUSTIN/BI
E5            1     GUSTINE/BI
E6            2     GUSTOL/BI
E7            2     GUSY2C/BI
E8           70     GUT/BI
E9            2     GUT1/BI
E10           7     GUT2/BI
E11           4     GUT5/BI
E12           3     GUT88/BI

=> s e2
L1            3 GUSTDUCIN/BI

=> e transducin?
E1            1     TRANSDUCERS/BI
E2           91     TRANSDUCIN/BI
E3            0 --> TRANSDUCIN?/BI
E4           69     TRANSDUCING/BI
E5            2     TRANSDUCISO/BI
E6            2     TRANSDUCISOMAL/BI
E7            2     TRANSDUCTING/BI
E8          180     TRANSDUCTION/BI
E9            1     TRANSE/BI
E10           1     TRANSEAL/BI
E11           1     TRANSEFER/BI
E12           1     TRANSEFERASE/BI

=> s e2
L2           91 TRANSDUCIN/BI

=> e adenosine monophosphat?
E1          148     ADENOSINATO/BI
E2        49456     ADENOSINE/BI
E3            0 --> ADENOSINE MONOPHOSPHAT?/BI
E4            1     ADENOSINE,1067/BI
E5            1     ADENOSINE,1073/BI
E6            1     ADENOSINE,1077/BI
E7            1     ADENOSINE,108/BI
```

```
E8            1      ADENOSINE,1080/BI
E9            1      ADENOSINE,1086/BI
E10           1      ADENOSINE,1102/BI
E11           1      ADENOSINE,1106/BI
E12           1      ADENOSINE,114/BI

=> e amp
E1            1      AMOYLYOHIMBI/BI
E2            1      AMOYLYOHIMBINE/BI
E3          550 --> AMP/BI
E4           23      AMP1/BI
E5            1      AMP11/BI
E6            1      AMP11.14/BI
E7            1      AMP1114/BI
E8            6      AMP19/BI
E9           17      AMP2/BI
E10           1      AMP3/BI
E11          49      AMPA/BI
E12           1      AMPAC/BI

=> s e3
L3          550 AMP/BI

=> d
```

L3 ANSWER 1 OF 550 REGISTRY COPYRIGHT 2001 ACS
RN 361381-05-7 REGISTRY
CN **2-Propenamide, N-(1,1-dimethyl-3-oxobutyl)-, polymer with AMP (acrylate polymer) (9CI)** (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN **AMP (acrylate polymer), polymer with N-(1,1-dimethyl-3-oxobutyl)-2-propenamide (9CI)**
MF (C9 H15 N O2 . Unspecified)x
CI PMS
PCT Manual component, Polyacrylic, Polyether
SR CA
LC STN Files: CA, CAPLUS, TOXLIT, USPATFULL

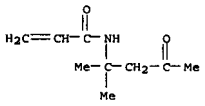
CM 1

CRN 177933-73-2
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 2873-97-4
CMF C9 H15 N O2



1 REFERENCES IN FILE CA (1967 TO DATE)
1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

09/470,467

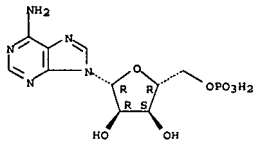
```
=> e adenosine monophosphate/cn
E1            1     ADENOSINE L-CYSTEINE HYDROCHLORIDE MIXTURE/CN
E2            2     ADENOSINE MONOPHOSPHATASE/CN
E3            1 --> ADENOSINE MONOPHOSPHATE/CN
E4            1     ADENOSINE MONOPHOSPHATE DEAMINASE/CN
E5            1     ADENOSINE MONOPHOSPHATE N1-OXIDE/CN
E6            1     ADENOSINE MONOPHOSPHATE NUCLEOSIDASE/CN
E7            1     ADENOSINE MONOSULFATE/CN
E8            1     ADENOSINE MONOTHIOTRIPHOSPHATE-.GAMMA.-35S/CN
E9            1     ADENOSINE N-1-OXIDE/CN
E10           1     ADENOSINE N-OXIDE/CN
E11           1     ADENOSINE N-OXIDE REDUCTASE/CN
E12           1     ADENOSINE N1-OXIDE/CN

=> s e3
L4            1 "ADENOSINE MONOPHOSPHATE"/CN

=> d
```

L4 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2001 ACS
RN 61-19-8 REGISTRY
CN 5'-Adenylic acid (8CI, 9CI) (CA INDEX NAME)
OTHER NAMES:
CN 5'-AMP
CN Adenosine 5'-(dihydrogen phosphate)
CN Adenosine 5'-monophosphate
CN Adenosine 5'-phosphate
CN Adenosine 5'-phosphoric acid
CN **Adenosine monophosphate**
CN Adenosine phosphate
CN Adenosine-5'-monophosphoric acid
CN Adenosine-5-monophosphoric acid
CN Adenovite
CN Adenylic acid
CN AMP
CN AMP (nucleotide)
CN Cardiomone
CN Lycedan
CN My-B-Den
CN Phosaden
CN Phosphaden
CN Phosphentaside
FS STEREOSEARCH
DR 162756-82-3, 53624-78-5, 67583-85-1, 47286-65-7, 47287-97-8
MF C10 H14 N5 O7 P
CI COM
LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, BEILSTEIN*, BIOBUSINESS, BIOSIS,
BIOTECHNO, CA, CABA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMLIST, CIN, CSCHEM, DDFU, DETHERM*, DRUGU, EMBASE, GMELIN*,
HODOC*, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, MSDS-OHS, NAPRALERT, NIOSHTIC, PIRA, PROMT, RTECS*, SPECINFO, TOXLIT, USAN, USPATFULL
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**, WHO
(**Enter CHEMLIST File for up-to-date regulatory information)

Absolute stereochemistry.



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

13551 REFERENCES IN FILE CA (1967 TO DATE)

L4 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2001 ACS (Continued)
350 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
13569 REFERENCES IN FILE CAPLUS (1967 TO DATE)
15 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

09/470,467

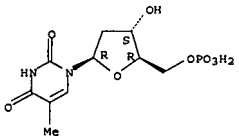
```
=> e thymidine monophosphate/cn
E1            1     THYMIDINE KINASE-THYMIDYLATE KINASE CHIMERIC POLYPEPTIDE (WH
                    ITE SPOT SYNDROME VIRUS ISOLATE TAIWAN)/CN
E2            1     THYMIDINE MONONUCLEOTIDE/CN
E3            1 --> THYMIDINE MONOPHOSPHATE/CN
E4            1     THYMIDINE MONOPHOSPHATE KINASE/CN
E5            2     THYMIDINE MONOPHOSPHATE NUCLEOTIDASE/CN
E6            1     THYMIDINE PENTADECAMER/CN
E7            1     THYMIDINE PHOSPHATE/CN
E8            1     THYMIDINE PHOSPHORYLASE/CN
E9            1     THYMIDINE PHOSPHORYLASE (1-241) (ESCHERICHIA COLI PLASMID PD
                    TP6)/CN
E10           1     THYMIDINE PHOSPHORYLASE (79-241) (ESCHERICHIA COLI PLASMID P
                    DTP7)/CN
E11           1     THYMIDINE PHOSPHORYLASE (79-440) (ESCHERICHIA COLI PLASMID P
                    DTP8)/CN
E12           1     THYMIDINE PHOSPHORYLASE (DEOA-1) (ARCHAEOGLOBUS FULGIDUS GEN
                    E AF1341)/CN

=> s e3
L5            1 "THYMIDINE MONOPHOSPHATE"/CN

=> d
```

L5 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2001 ACS
RN 365-07-1 REGISTRY
CN 5'-Thymidylic acid (8CI, 9CI) (CA INDEX NAME)
OTHER NAMES:
CN 2'-Deoxythymidine 5'-monophosphate
CN 5'-dTMP
CN 5'-TMP
CN 5-Methyl-dUMP
CN Deoxy TMP
CN Deoxyribosylthymine monophosphate
CN Deoxythymidine 5'-monophosphate
CN Deoxythymidine 5'-phosphate
CN Deoxythymidine monophosphate
CN Deoxythymidine phosphate
CN Deoxythymidylic acid
CN dpT
CN dTMP
CN Thymidine 5'-(dihydrogen phosphate)
CN Thymidine 5'-monophosphate
CN Thymidine 5'-phosphate
CN Thymidine 5'-phosphoric acid
CN Thymidine mononucleotide
CN **Thymidine monophosphate**
CN Thymidine phosphate
CN Thymidine, mono(dihydrogen phosphate) (ester)
CN Thymidine-5'-monophosphoric acid
CN Thymidylic acid
CN TMP
CN TMP (nucleotide)
FS STEREOSEARCH
DR 125786-57-4, 81795-95-1, 87578-09-4, 29592-98-1
MF C10 H15 N2 O8 P
CI COM
LC STN Files: AGRICOLA, ANABSTR, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CHEMCATS, CIN, CSCHEM, DDFU, DRUGU, EMBASE, IFICDB, IFIPAT, IFIUDB, MEDLINE, NIOSHTIC, PIRA, PROMT, RTECS*, TOXLIT, USPATFULL
(*File contains numerically searchable property data)

Absolute stereochemistry.



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1480 REFERENCES IN FILE CA (1967 TO DATE)

L5 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2001 ACS (Continued)
71 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
1480 REFERENCES IN FILE CAPLUS (1967 TO DATE)
69 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

09/470,467

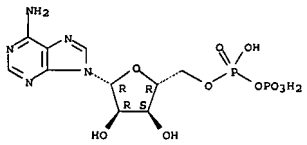
```
=> e adenosine diphosphate/cn
E1            1     ADENOSINE DIALDEHYDE P-NITROPHENYLHYDRAZONE/CN
E2            1     ADENOSINE DIPHOSPHATASE/CN
E3            1 --> ADENOSINE DIPHOSPHATE/CN
E4            1     ADENOSINE DIPHOSPHATE BARIUM SALT TETRAHYDRATE/CN
E5            1     ADENOSINE DIPHOSPHATE D-GLUCOSE/CN
E6            1     ADENOSINE DIPHOSPHATE DEAMINASE/CN
E7            1     ADENOSINE DIPHOSPHATE GLUCOSE/CN
E8            1     ADENOSINE DIPHOSPHATE GLUCOSE PYROPHOSPHORYLASE/CN
E9            1     ADENOSINE DIPHOSPHATE GLUCOSE-STARCH GLUCOSYLTRANSFERASE/CN
E10           1     ADENOSINE DIPHOSPHATE PHOSPHOGLYCERATE PHOSPHATASE/CN
E11           1     ADENOSINE DIPHOSPHATE POTASSIUM SALT/CN
E12           1     ADENOSINE DIPHOSPHATE RIBOSE/CN

=> s e3
L6            1 "ADENOSINE DIPHOSPHATE"/CN

=> d
```

L6 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2001 ACS
RN 58-64-0 REGISTRY
CN Adenosine 5'-(trihydrogen diphosphate) (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Adenosine 5'-(trihydrogen pyrophosphate) (8CI)
CN **Adenosine diphosphate (6CI)**
OTHER NAMES:
CN .alpha.-ADP
CN 5'-ADP
CN Adenosine 5'-diphosphate
CN Adenosine 5'-diphosphoric acid
CN Adenosine 5'-pyrophosphate
CN Adenosine 5'-pyrophosphoric acid
CN Adenosine pyrophosphate
CN Adenosine, 5'-(trihydrogen diphosphate)
CN ADP
CN ADP (nucleotide)
FS STEREOSEARCH
DR 84412-16-8
MF C10 H15 N5 O10 P2
CI COM
LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, BEILSTEIN*, BIOBUSINESS, BIOSIS,
BIOTECHNO, CA, CABA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CEN, CHEMCATS, CHEMLIST, CIN, CSCHEM, DDFU, DETHERM*, DRUGU, EMBASE, GMELIN*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, NIOSHTIC, PIRA, PROMT, RTECS*, TOXLIT, USPATFULL, VETU
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)

Absolute stereochemistry.



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

19884 REFERENCES IN FILE CA (1967 TO DATE)
453 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
19905 REFERENCES IN FILE CAPLUS (1967 TO DATE)
22 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

09/470,467

```
=> e adenosine succinate/cn
E1            1     ADENOSINE RECEPTOR A3 (TAPIRUS INDICUS GENE ADORA3)/CN
E2            1     ADENOSINE SIGNALING APTAMER RAFL17-U61C/CN
E3            0 --> ADENOSINE SUCCINATE/CN
E4            1     ADENOSINE SULFATE/CN
E5            1     ADENOSINE SULFATOPHOSPHATE/CN
E6            1     ADENOSINE TETRAHYDROGEN TRIPHOSPHATE, 1-OXIDE, 5'.FWDARW.5'-
                    ESTER WITH RIBOFLAVINE/CN
E7            1     ADENOSINE TETRAPHOSPHATE/CN
E8            1     ADENOSINE TETRAPHOSPHATE PHOSPHODIESTERASE/CN
E9            1     ADENOSINE TETRAPHOSPHATE, 5'.FWDARW.5'-ESTER WITH 2'-DEOXYGU
                    ANOSINE/CN
E10           1     ADENOSINE TETRAPHOSPHATE, 5'.FWDARW.5'-ESTER WITH ADENOSINE,
                     DICALCIUM SALT/CN
E11           1     ADENOSINE TETRAPHOSPHATE, 5'.FWDARW.5'-ESTER WITH URIDINE/CN
E12           1     ADENOSINE TRANSPORT PROTEIN (LEISHMANIA DONOVANI STRAIN 1S G
                    ENE LDNT1.1 N-TERMINAL FRAGMENT)/CN

=> e adenosine succinat?
E1          148     ADENOSINATO/BI
E2        49456     ADENOSINE/BI
E3            0 --> ADENOSINE SUCCINAT?/BI
E4            1     ADENOSINE,1067/BI
E5            1     ADENOSINE,1073/BI
E6            1     ADENOSINE,1077/BI
E7            1     ADENOSINE,108/BI
E8            1     ADENOSINE,1080/BI
E9            1     ADENOSINE,1086/BI
E10           1     ADENOSINE,1102/BI
E11           1     ADENOSINE,1106/BI
E12           1     ADENOSINE,114/BI

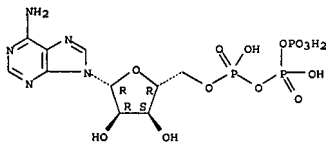
=> e adenosine triphosphate/cn
E1            1     ADENOSINE TRIPHOSPHATASE, VACUOLAR-TYPE (PLEUROCHRYSIS CARTE
                    RAE STRAIN 136 CLONE PVA12-EXT GENE VAP)/CN
E2            1     ADENOSINE TRIPHOSPHATASE-INHIBITING PROTEIN (MUS MUSCULUS ST
                    RAIN DBA/1 JOINT GENE IF1 PRECURSOR)/CN
E3            1 --> ADENOSINE TRIPHOSPHATE/CN
E4            1     ADENOSINE TRIPHOSPHATE CITRATE LYASE/CN
E5            1     ADENOSINE TRIPHOSPHATE COBALT SALT/CN
E6            1     ADENOSINE TRIPHOSPHATE DEAMINASE/CN
E7            1     ADENOSINE TRIPHOSPHATE DISODIUM SALT/CN
E8            1     ADENOSINE TRIPHOSPHATE MALATE LYASE/CN
E9            1     ADENOSINE TRIPHOSPHATE N1-OXIDE/CN
E10           1     ADENOSINE TRIPHOSPHATE PHOSPHORIBOSYLTRANSFERASE/CN
E11           1     ADENOSINE TRIPHOSPHATE PYROPHOSPHATASE/CN
E12           1     ADENOSINE TRIPHOSPHATE SYNTHETASE/CN

=> s e3
L7            1 "ADENOSINE TRIPHOSPHATE"/CN

=> d
```

L7 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2001 ACS
RN 56-65-5 REGISTRY
CN Adenosine 5'-(tetrahydrogen triphosphate) (8CI, 9CI) (CA INDEX NAME)
OTHER NAMES:
CN 5'-ATP
CN Adenosine 5'-triphosphate
CN Adenosine 5'-triphosphoric acid
CN **Adenosine triphosphate**
CN Adenosine, 5'-(tetrahydrogen triphosphate)
CN Adenylpyrophosphoric acid
CN Adephos
CN Adetol
CN Adynol
CN Atipi
CN ATP
CN ATP (nucleotide)
CN Atriphos
CN Cardenosine
CN Fosfobion
CN Glucobasin
CN Myotriphos
CN Phosphobion
CN Striadyne
CN Triadenyl
CN Triphosphaden
CN Triphosphoric acid adenosine ester
FS STEREOSEARCH
DR 10168-83-9, 16488-07-6, 51569-41-6, 71800-44-7, 84412-18-0
MF C10 H16 N5 O13 P3
CI COM
LC STN Files: ADISINSIGHT, ADISNEWS, AGRICOLA, ANABSTR, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CEN, CHEMCATS, CHEMLIST, CIN, CSCHEM, DDFU, DETHERM*, DRUGNL, DRUGU, DRUGUPDATES, EMBASE, GMELIN*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, NAPRALERT, NIOSHTIC, PHAR, PIRA, PROMT, RTECS*, SPECINFO, TOXLIT, TULSA, USPATFULL
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)

Absolute stereochemistry.



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L7 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2001 ACS (Continued)
58549 REFERENCES IN FILE CA (1967 TO DATE)
1090 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
58616 REFERENCES IN FILE CAPLUS (1967 TO DATE)
19 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

09/470,467

```
=> e cytidylic acid/cn
E1            1     CYTIDYLATE KINASE MPN476 (MYCOPLASMA PNEUMONIAE STRAIN M129
                    GENE CMK)/CN
E2            1     CYTIDYLATE KINASE-LIKE PROTEIN (SYNECHOCYSTIS STRAIN PCC-680
                    3 GENE KCY)/CN
E3            2 --> CYTIDYLIC ACID/CN
E4            1     CYTIDYLIC ACID B/CN
E5            1     CYTIDYLIC ACID SODIUM SALT/CN
E6            1     CYTIDYLIC ACID, 2'-DEOXY-/CN
E7            1     CYTIDYLIC ACID, 3',5'''-BIMOL. ESTER, 3''',5'-ESTER WITH CYT
                    IDINE CYCLIC 2',3'-PHOSPHATE/CN
E8            1     CYTIDYLIC ACID, 5,6-DIHYDRO-6-HYDROXY-/CN
E9            1     CYTIDYLIC ACID, DIPHENYLMETHYL ESTER/CN
E10           1     CYTIDYLIC ACID, N-((DIMETHYLAMINO)METHYLENE)-2'-O-(TETRAHYDR
                    O-2H-PYRAN-2-YL)-, 5'-(HYDROGEN PHOSPHONATE)/CN
E11           1     CYTIDYLTRANSFERASE, GLYCEROL 3-PHOSPHATE (ARCHAEOGLOBUS FULG
                    IDUS GENE AF1418)/CN
E12           1     CYTIDYLYL (3',5')-2'-DEOXY-3'-O-L-PHENYLALANYLADENOSINE/CN

=> s e3
L8            2 "CYTIDYLIC ACID"/CN

=> e cytidylic acid?
E1            2     CYTIDYLCOBALAMIN/BI
E2         4083     CYTIDYLIC/BI
E3            0 --> CYTIDYLIC ACID?/BI
E4           10     CYTIDYLTRANSFER/BI
E5           10     CYTIDYLTRANSFERASE/BI
E6        46796     CYTIDYLYL/BI
E7            1     CYTIDYLYL.FWDARW./BI
E8            2     CYTIDYLYLADENOSINE/BI
E9            2     CYTIDYLYLADENYL/BI
E10           2     CYTIDYLYLADENYLYL/BI
E11           1     CYTIDYLYLADENYLYLGUAN/BI
E12           1     CYTIDYLYLADENYLYLGUANYL/BI

=> e cytidylic acid/cn
E1            1     CYTIDYLATE KINASE MPN476 (MYCOPLASMA PNEUMONIAE STRAIN M129
                    GENE CMK)/CN
E2            1     CYTIDYLATE KINASE-LIKE PROTEIN (SYNECHOCYSTIS STRAIN PCC-680
                    3 GENE KCY)/CN
E3            2 --> CYTIDYLIC ACID/CN
E4            1     CYTIDYLIC ACID B/CN
E5            1     CYTIDYLIC ACID SODIUM SALT/CN
E6            1     CYTIDYLIC ACID, 2'-DEOXY-/CN
E7            1     CYTIDYLIC ACID, 3',5'''-BIMOL. ESTER, 3''',5'-ESTER WITH CYT
                    IDINE CYCLIC 2',3'-PHOSPHATE/CN
E8            1     CYTIDYLIC ACID, 5,6-DIHYDRO-6-HYDROXY-/CN
E9            1     CYTIDYLIC ACID, DIPHENYLMETHYL ESTER/CN
E10           1     CYTIDYLIC ACID, N-((DIMETHYLAMINO)METHYLENE)-2'-O-(TETRAHYDR
                    O-2H-PYRAN-2-YL)-, 5'-(HYDROGEN PHOSPHONATE)/CN
E11           1     CYTIDYLTRANSFERASE, GLYCEROL 3-PHOSPHATE (ARCHAEOGLOBUS FULG
                    IDUS GENE AF1418)/CN
E12           1     CYTIDYLYL (3',5')-2'-DEOXY-3'-O-L-PHENYLALANYLADENOSINE/CN

=> s e3-e10
              2 "CYTIDYLIC ACID"/CN
              1 "CYTIDYLIC ACID B"/CN
```

```
             1 "CYTIDYLIC ACID SODIUM SALT"/CN
             1 "CYTIDYLIC ACID, 2'-DEOXY-"/CN
             1 "CYTIDYLIC ACID, 3',5'''-BIMOL. ESTER, 3''',5'-ESTER WITH CYTIDI
               NE CYCLIC 2',3'-PHOSPHATE"/CN
             1 "CYTIDYLIC ACID, 5,6-DIHYDRO-6-HYDROXY-"/CN
             1 "CYTIDYLIC ACID, DIPHENYLMETHYL ESTER"/CN
             1 "CYTIDYLIC ACID, N-((DIMETHYLAMINO)METHYLENE)-2'-O-(TETRAHYDRO-2
               H-PYRAN-2-YL)-, 5'-(HYDROGEN PHOSPHONATE)"/CN
L9           9 ("CYTIDYLIC ACID"/CN OR "CYTIDYLIC ACID B"/CN OR "CYTIDYLIC
               ACID SODIUM SALT"/CN OR "CYTIDYLIC ACID, 2'-DEOXY-"/CN OR "CYTID
               YLIC ACID, 3',5'''-BIMOL. ESTER, 3''',5'-ESTER WITH CYTIDINE
               CYCLIC 2',3'-PHOSPHATE"/CN OR "CYTIDYLIC ACID, 5,6-DIHYDRO-6-HYD
               ROXY-"/CN OR "CYTIDYLIC ACID, DIPHENYLMETHYL ESTER"/CN OR "CYTID
               YLIC ACID, N-((DIMETHYLAMINO)METHYLENE)-2'-O-(TETRAHYDRO-2H-PYRA
               N-2-YL)-, 5'-(HYDROGEN PHOSPHONATE)"/CN)

=> d
```

L9 ANSWER 1 OF 9 REGISTRY COPYRIGHT 2001 ACS
RN 336176-72-8 REGISTRY
CN **Cytidylic acid (9CI)** (CA INDEX NAME)
FS STEREOSEARCH
MF C9 H14 N3 O8 P
CI IDS
SR CAS Registry Services
LC STN Files: CHEMCATS

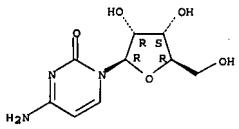
CM 1

CRN 7664-38-2
CMF H3 O4 P

CM 2

CRN 65-46-3
CMF C9 H13 N3 O5

Absolute stereochemistry.



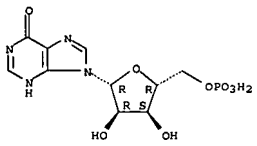
```
=> e inosinic acid/cn
E1            1     INOSINE-URIDINE PREFERRING NUCLEOSIDE HYDROLASE (DEINOCOCCUS
                     RADIODURANS STRAIN R1 GENE DR0403)/CN
E2            1     INOSINE-URIDINE PREFERRING NUCLEOSIDE HYDROLASE PROTEIN (SIN
                    ORHIZOBIUM MELILOTI STRAIN 1021 GENE SMB21277)/CN
E3            1 --> INOSINIC ACID/CN
E4            1     INOSINIC ACID DEHYDROGENASE/CN
E5            1     INOSINIC ACID PYROPHOSPHORYLASE/CN
E6            1     INOSINIC ACID, 3,12-DIAZA-6,9-DIAZONIADISPIRO(5.2.5.2)HEXADE
                    CANE-3,12-DIYLBIS(2-HYDROXY-3,1-PROPANEDIYL) ESTER, DICHLORI
                    DE/CN
E7            1     INOSINIC ACID, 5'-(DIHYDROGEN PHOSPHATE)/CN
E8            1     INOSINIC ACID, ADENYLYL-(3'.FWDARW.5')-ADENYLYL-(3'.FWDARW.5
                    ')-ADENYLYL-(3'.FWDARW.5')-ADENYLYL-(3'.FWDARW.5')-ADENYLYL-
                    (3'.FWDARW.5')-ADENYLYL-(3'.FWDARW.5')-CYTIDYLYL-(3'.FWDARW.
                    5')-/CN
E9            1     INOSINIC ACID, BARIUM SALT/CN
E10           1     INOSINIC ACID, CALCIUM SALT/CN
E11           1     INOSINIC ACID, CYCLIC ESTER/CN
E12           1     INOSINIC ACID-2-METHYLTHIOINOSINIC ACID COPOLYMER/CN

=> s e3
L10           1 "INOSINIC ACID"/CN

=> d
```

L10 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2001 ACS
RN 131-99-7 REGISTRY
CN 5'-Inosinic acid (8CI, 9CI) (CA INDEX NAME)
OTHER NAMES:
CN 5'-IMP
CN IMP
CN Inosine 5'-(dihydrogen phosphate)
CN Inosine 5'-monophosphate
CN Inosine 5'-phosphate
CN Inosine-5'-monophosphoric acid
CN **Inosinic acid**
FS STEREOSEARCH
DR 485-83-6, 138240-72-9
MF C10 H13 N4 O8 P
CI COM
LC STN Files: AGRICOLA, ANABSTR, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CHEMCATS, CHEMLIST, CIN, CSCHEM, DDFU, DRUGU, EMBASE, GMELIN*, IFICDB, IFIPAT, IFIUDB, MEDLINE, MRCK*, NAPRALERT, NIOSHTIC, PROMT, RTECS*, TOXLIT, USPATFULL
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)

Absolute stereochemistry.



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

3037 REFERENCES IN FILE CA (1967 TO DATE)
71 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
3038 REFERENCES IN FILE CAPLUS (1967 TO DATE)
13 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

09/470,467

```
=> s e3-e11
             1 "INOSINIC ACID"/CN
             1 "INOSINIC ACID DEHYDROGENASE"/CN
             1 "INOSINIC ACID PYROPHOSPHORYLASE"/CN
             1 "INOSINIC ACID, 3,12-DIAZA-6,9-DIAZONIADISPIRO(5.2.5.2)HEXADECAN
               E-3,12-DIYLBIS(2-HYDROXY-3,1-PROPANEDIYL) ESTER, DICHLORIDE"/CN
             1 "INOSINIC ACID, 5'-(DIHYDROGEN PHOSPHATE)"/CN
             1 "INOSINIC ACID, ADENYLYL-(3'.FWDARW.5')-ADENYLYL-(3'.FWDARW.5')-
               ADENYLYL-(3'.FWDARW.5')-ADENYLYL-(3'.FWDARW.5')-ADENYLYL-(3'.FWD
               ARW.5')-ADENYLYL-(3'.FWDARW.5')-CYTIDYLYL-(3'.FWDARW.5')-"/CN
             1 "INOSINIC ACID, BARIUM SALT"/CN
             1 "INOSINIC ACID, CALCIUM SALT"/CN
             1 "INOSINIC ACID, CYCLIC ESTER"/CN
L11          9 ("INOSINIC ACID"/CN OR "INOSINIC ACID DEHYDROGENASE"/CN OR "INOS
               INIC ACID PYROPHOSPHORYLASE"/CN OR "INOSINIC ACID, 3,12-DIAZA-6,
               9-DIAZONIADISPIRO(5.2.5.2)HEXADECANE-3,12-DIYLBIS(2-HYDROXY-3,1-
               PROPANEDIYL) ESTER, DICHLORIDE"/CN OR "INOSINIC ACID, 5'-(DIHYDR
               OGEN PHOSPHATE)"/CN OR "INOSINIC ACID, ADENYLYL-(3'.FWDARW.5')-A
               DENYLYL-(3'.FWDARW.5')-ADENYLYL-(3'.FWDARW.5')-ADENYLYL-(3'.FWDA
               RW.5')-ADENYLYL-(3'.FWDARW.5')-ADENYLYL-(3'.FWDARW.5')-CYTIDYLYL
               -(3'.FWDARW.5')-"/CN OR "INOSINIC ACID, BARIUM SALT"/CN OR "INOS
               INIC ACID, CALCIUM SALT"/CN OR "INOSINIC ACID, CYCLIC ESTER"/CN)

=> e adenosine succinat?
E1         148     ADENOSINATO/BI
E2       49456     ADENOSINE/BI
E3           0 --> ADENOSINE SUCCINAT?/BI
E4           1     ADENOSINE,1067/BI
E5           1     ADENOSINE,1073/BI
E6           1     ADENOSINE,1077/BI
E7           1     ADENOSINE,108/BI
E8           1     ADENOSINE,1080/BI
E9           1     ADENOSINE,1086/BI
E10          1     ADENOSINE,1102/BI
E11          1     ADENOSINE,1106/BI
E12          1     ADENOSINE,114/BI

=> s e2
L12      49456 ADENOSINE/BI

=> e succinate/cn
E1           1     SUCCINANILIDE, N-METHYL-/CN
E2           1     SUCCINANISIDIDE, 2,3-EPOXY-/CN
E3           1 --> SUCCINATE/CN
E4           1     SUCCINATE 2,4-DICHLOROPHENOL-INDOPHENOL REDUCTASE/CN
E5           1     SUCCINATE COQ REDUCTASE/CN
E6           1     SUCCINATE DECARBOXYLASE/CN
E7           1     SUCCINATE DEHYDROGENASE/CN
E8           1     SUCCINATE DEHYDROGENASE (A SUBUNIT) (PSEUDOMONAS AERUGINOSA
                   STRAIN PAO1 GENE SDHA)/CN
E9           1     SUCCINATE DEHYDROGENASE (ACIDIANUS AMBIVALENS STRAIN LEI-10
                   GENE SDHA SUBUNIT A)/CN
E10          1     SUCCINATE DEHYDROGENASE (ACIDIANUS AMBIVALENS STRAIN LEI-10
                   GENE SDHB SUBUNIT B)/CN
E11          1     SUCCINATE DEHYDROGENASE (ACIDIANUS AMBIVALENS STRAIN LEI-10
                   GENE SDHC SUBUNIT C)/CN
E12          1     SUCCINATE DEHYDROGENASE (ACIDIANUS AMBIVALENS STRAIN LEI-10
                   GENE SDHD SUBUNIT D)/CN
```

```
=> s e3
L13           1 SUCCINATE/CN

=> s l12 and l13
L14           0 L12 AND L13

=> e adenosine succin?
E1          148     ADENOSINATO/BI
E2        49456     ADENOSINE/BI
E3            0 --> ADENOSINE SUCCIN?/BI
E4            1     ADENOSINE,1067/BI
E5            1     ADENOSINE,1073/BI
E6            1     ADENOSINE,1077/BI
E7            1     ADENOSINE,108/BI
E8            1     ADENOSINE,1080/BI
E9            1     ADENOSINE,1086/BI
E10           1     ADENOSINE,1102/BI
E11           1     ADENOSINE,1106/BI
E12           1     ADENOSINE,114/BI

=> fil .search
COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                         ENTRY    SESSION
FULL ESTIMATED COST                                     120.93     121.08

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=> d his

     (FILE 'HOME' ENTERED AT 09:36:38 ON 25 OCT 2001)

     FILE 'REGISTRY' ENTERED AT 09:36:43 ON 25 OCT 2001
                E GUSTDUCIN?
L1            3 S E2
                E TRANSDUCIN?
L2           91 S E2
                E ADENOSINE MONOPHOSPHAT?
                E AMP
L3          550 S E3
                E ADENOSINE MONOPHOSPHATE/CN
L4            1 S E3
                E THYMIDINE MONOPHOSPHATE/CN
L5            1 S E3
```

```
                E ADENOSINE DIPHOSPHATE/CN
L6            1 S E3
                E ADENOSINE SUCCINATE/CN
                E ADENOSINE SUCCINAT?
                E ADENOSINE TRIPHOSPHATE/CN
L7            1 S E3
                E CYTIDYLIC ACID/CN
L8            2 S E3
                E CYTIDYLIC ACID?
                E CYTIDYLIC ACID/CN
L9            9 S E3-E10
                E INOSINIC ACID/CN
L10           1 S E3
L11           9 S E3-E11
                E ADENOSINE SUCCINAT?
L12       49456 S E2
                E SUCCINATE/CN
L13           1 S E3
L14           0 S L12 AND L13
                E ADENOSINE SUCCIN?

     FILE 'MEDLINE, CAPLUS, BIOSIS, USPATFULL, EMBASE' ENTERED AT 09:44:39 ON
     25 OCT 2001

=> s l1 or l2
L15         921 L1 OR L2

=> s l15 and (bitter(w)tast? or flavor? or flavor(w)enhanc?)
L16          16 L15 AND (BITTER(W) TAST? OR FLAVOR? OR FLAVOR(W) ENHANC?)

=> dup rem l16
PROCESSING COMPLETED FOR L16
L17          15 DUP REM L16 (1 DUPLICATE REMOVED)

=> d ibib ab 1-
YOU HAVE REQUESTED DATA FROM 15 ANSWERS - CONTINUE? Y/(N):y
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L17 ANSWER 1 OF 15 MEDLINE
ACCESSION NUMBER: 2001207384 MEDLINE
DOCUMENT NUMBER: 21143860 PubMed ID: 11245589
TITLE: **Bitter taste** transduced by PLC-beta(2)-dependent rise in IP(3) and alpha-gustducin-dependent fall in cyclic nucleotides.
AUTHOR: Yan W; Sunavala G; Rosenzweig S; Dasso M; Brand J G; Spielman A I
CORPORATE SOURCE: Department of Basic Science and Craniofacial Biology, Division of Biological Science, Medicine, and Surgery, New York University College of Dentistry, 345 E. 24th St., New York, NY 10010, USA.
CONTRACT NUMBER: DC-00356 (NIDCD)
DC-03969 (NIDCD)
DE-10754 (NIDCR)
SOURCE: AMERICAN JOURNAL OF PHYSIOLOGY. CELL PHYSIOLOGY, (2001 Apr)
280 (4) C742-51.
Journal code: DKJ; 100901225. ISSN: 0363-6143.
PUB. COUNTRY: United States
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200104
ENTRY DATE: Entered STN: 20010417
Last Updated on STN: 20010417
Entered Medline: 20010412

AB Current evidence points to the existence of multiple processes for **bitter taste** transduction. Previous work demonstrated involvement of the polyphosphoinositide system and an alpha-gustducin (Galpha(gust))-mediated stimulation of phosphodiesterase in **bitter taste** transduction. Additionally, a taste-enriched G protein gamma-subunit, Ggamma(13), colocalizes with Galpha(gust) and mediates the denatonium-stimulated production of inositol 1,4,5-trisphosphate (IP(3)). Using quench-flow techniques, we show here that the bitter stimuli, denatonium and strychnine, induce rapid (50-100 ms) and transient reductions in cAMP and cGMP and increases in IP(3) in murine taste tissue.
This decrease of cyclic nucleotides is inhibited by Galpha(gust) antibodies, whereas the increase in IP(3) is not affected by antibodies to
Galpha(gust). IP(3) production is inhibited by antibodies specific to phospholipase C-beta(2) (PLC-beta(2)), a PLC isoform known to be activated
by Gbetagamma-subunits. Antibodies to PLC-beta(3) or to PLC-beta(4) were without effect. These data suggest a transduction mechanism for **bitter taste** involving the rapid and transient metabolism of dual second messenger systems, both mediated through a taste
cell G protein, likely composed of Galpha(gust)/beta/gamma(13), with both systems being simultaneously activated in the same bitter-sensitive taste receptor cell.

L17 ANSWER 2 OF 15 MEDLINE
ACCESSION NUMBER: 2000205609 MEDLINE
DOCUMENT NUMBER: 20205609 PubMed ID: 10744529
TITLE: Family of **bitter taste** receptors found.
AUTHOR: Barinaga M
SOURCE: SCIENCE, (2000 Mar 24) 287 (5461) 2133-5.
Journal code: UJ7; 0404511. ISSN: 0036-8075.
PUB. COUNTRY: United States
News Announcement
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200003
ENTRY DATE: Entered STN: 20000407
Last Updated on STN: 20000407
Entered Medline: 20000330

L17 ANSWER 3 OF 15 MEDLINE
ACCESSION NUMBER: 2000222572 MEDLINE
DOCUMENT NUMBER: 20222572 PubMed ID: 10761935
TITLE: T2Rs function as **bitter taste** receptors.
AUTHOR: Chandrashekar J; Mueller K L; Hoon M A; Adler E; Feng L; Guo W; Zuker C S; Ryba N J
CORPORATE SOURCE: Howard Hughes Medical Institute and Department of Biology, University of California, San Diego, La Jolla 92093, USA.
SOURCE: CELL, (2000 Mar 17) 100 (6) 703-11.
Journal code: CQ4; 0413066. ISSN: 0092-8674.
PUB. COUNTRY: United States
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200004
ENTRY DATE: Entered STN: 20000505
Last Updated on STN: 20000505
Entered Medline: 20000427

AB **Bitter taste** perception provides animals with critical protection against ingestion of poisonous compounds. In the accompanying paper, we report the characterization of a large family of putative mammalian taste receptors (T2Rs). Here we use a heterologous expression system to show that specific T2Rs function as **bitter taste** receptors. A mouse T2R (mT2R-5) responds to the **bitter tastant** cycloheximide, and a human and a mouse receptor (hT2R-4 and mT2R-8) responded to denatonium and 6-n-propyl-2-thiouracil. Mice strains deficient in their ability to detect
cycloheximide have amino acid substitutions in the mT2R-5 gene; these changes render the receptor significantly less responsive to cycloheximide. We also expressed mT2R-5 in insect cells and demonstrate specific tastant-dependent activation of gustducin, a G protein implicated
in bitter signaling. Since a single taste receptor cell expresses a large repertoire of T2Rs, these findings provide a plausible explanation for the
uniform **bitter taste** that is evoked by many structurally unrelated toxic compounds.

L17 ANSWER 4 OF 15 MEDLINE
ACCESSION NUMBER: 2000222571 MEDLINE
DOCUMENT NUMBER: 20222571 PubMed ID: 10761934
TITLE: A novel family of mammalian taste receptors.
COMMENT: Comment in: Cell. 2000 Mar 17;100(6):611-8
AUTHOR: Adler E; Hoon M A; Mueller K L; Chandrashekar J; Ryba N J; Zuker C S
CORPORATE SOURCE: National Institute of Dental and Craniofacial Research, National Institutes of Health, Bethesda, Maryland 20892, USA.
SOURCE: CELL, (2000 Mar 17) 100 (6) 693-702.
Journal code: CQ4; 0413066. ISSN: 0092-8674.
PUB. COUNTRY: United States
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
OTHER SOURCE: GENBANK-AF227129; GENBANK-AF227130; GENBANK-AF227131; GENBANK-AF227132; GENBANK-AF227133; GENBANK-AF227134; GENBANK-AF227135; GENBANK-AF227136; GENBANK-AF227137; GENBANK-AF227138; GENBANK-AF227139; GENBANK-AF227140; GENBANK-AF227141; GENBANK-AF227142; GENBANK-AF227143; GENBANK-AF227144; GENBANK-AF227145; GENBANK-AF227146; GENBANK-AF227147; GENBANK-AF227148; GENBANK-AF227149; GENBANK-AF240765; GENBANK-AF240766; GENBANK-AF240767; GENBANK-AF240768
ENTRY MONTH: 200004
ENTRY DATE: Entered STN: 20000505
Last Updated on STN: 20000505
Entered Medline: 20000427

AB In mammals, taste perception is a major mode of sensory input. We have identified a novel family of 40-80 human and rodent G protein-coupled receptors expressed in subsets of taste receptor cells of the tongue and palate epithelia. These candidate taste receptors (T2Rs) are organized in the genome in clusters and are genetically linked to loci that influence bitter perception in mice and humans. Notably, a single taste receptor cell expresses a large repertoire of T2Rs, suggesting that each cell may be capable of recognizing multiple tastants. T2Rs are exclusively expressed in taste receptor cells that contain the G protein alpha subunit
gustducin, implying that they function as gustducin-linked receptors. In the accompanying paper, we demonstrate that T2Rs couple to gustducin in vitro, and respond to **bitter tastants** in a functional expression assay.

L17 ANSWER 5 OF 15 USPATFULL
ACCESSION NUMBER: 1999:170393 USPATFULL
TITLE: Gustducin materials and methods
INVENTOR(S): Margolskee, Robert F., Upper Montclair, NJ, United States
PATENT ASSIGNEE(S): Linguagen Corporation, Basking Ridge, NJ, United States
(U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 6008000		19991228
APPLICATION INFO.:	US 1998-124807		19980728 (9)

RELATED APPLN. INFO.: Continuation of Ser. No. US 1995-407804, filed on 20 Mar 1995, now patented, Pat. No. US 5817759 which is a continuation-in-part of Ser. No. US 1992-868353, filed on 9 Apr 1992, now patented, Pat. No. US 5688662
DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Carlson, Karen Cochrane
LEGAL REPRESENTATIVE: Marshall, O'Toole, Gerstein, Murray & Borun
NUMBER OF CLAIMS: 2
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 2 Drawing Figure(s); 2 Drawing Page(s)
LINE COUNT: 1505
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A novel taste cell specific guanine nucleotide binding protein, gustducin, is disclosed as well as polynucleotide sequences encoding the .alpha. subunit of gustducin. Also disclosed are methods of modifying taste involving agents that inhibit or activate the gustducin .alpha. subunit, methods for identifying such taste modifying agents and various taste modifying agents.

L17 ANSWER 6 OF 15 MEDLINE DUPLICATE 1
ACCESSION NUMBER: 1999380617 MEDLINE
DOCUMENT NUMBER: 99380617 PubMed ID: 10449792
TITLE: Blocking taste receptor activation of gustducin inhibits gustatory responses to bitter compounds.
AUTHOR: Ming D; Ninomiya Y; Margolskee R F
CORPORATE SOURCE: Department of Physiology and Biophysics, The Mount Sinai School of Medicine, Box 1677, One Gustave L. Levy Place, New York, NY 10029, USA.
CONTRACT NUMBER: RO1DC03055 (NIDCD)
RO1DC3155 (NIDCD)
SOURCE: PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA, (1999 Aug 17) 96 (17) 9903-8. Journal code: PV3; 7505876. ISSN: 0027-8424.
PUB. COUNTRY: United States
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199909
ENTRY DATE: Entered STN: 19990925
Last Updated on STN: 20000303
Entered Medline: 19990909

AB Gustducin, a transducin-like guanine nucleotide-binding regulatory protein (G protein), and transducin are expressed in taste receptor cells where they are thought to mediate taste transduction. Gustducin and transducin are activated in the presence of bovine taste membranes by several compounds that humans perceive to be bitter. We have monitored this activation with an in vitro assay to identify compounds that inhibited taste receptor activation of transducin by **bitter tastants**: AMP and chemically related compounds inhibited in vitro responses to several bitter compounds (e.g., denatonium, quinine, strychnine, and atropine). AMP also inhibited behavioral and electrophysiological responses of mice to **bitter tastants**, but not to NaCl, HCl, or sucrose. GMP, although chemically similar to AMP, inhibited neither the bitter-responsive taste receptor activation of transducin nor the gustatory responses of mice to bitter compounds. AMP and certain related compounds may bind to bitter-responsive taste receptors or interfere with receptor-G protein coupling to serve as naturally occurring taste modifiers.

L17 ANSWER 7 OF 15 MEDLINE
ACCESSION NUMBER: 2000013015 MEDLINE
DOCUMENT NUMBER: 20013015 PubMed ID: 10545162
TITLE: Differential expression of carbohydrate blood-group antigens on rat taste-bud cells: relation to the functional marker alpha-gustducin.
AUTHOR: Pumplin D W; Getschman E; Boughter J D Jr; Yu C; Smith D V
CORPORATE SOURCE: Department of Anatomy, University of Maryland School of Medicine, Baltimore, Maryland 21201-1509, USA.. dpumplin@umaryland.edu
CONTRACT NUMBER: DC00347 (NIDCD)
NS15513 (NINDS)
SOURCE: JOURNAL OF COMPARATIVE NEUROLOGY, (1999 Dec 13) 415 (2) 230-9. Journal code: HUV; 0406041. ISSN: 0021-9967.
PUB. COUNTRY: United States
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199912
ENTRY DATE: Entered STN: 20000113
Last Updated on STN: 20000113
Entered Medline: 19991210

AB An afferent nerve fiber supplying a taste bud receives input from several taste receptor cells, yet is predominantly responsive to one of the classic taste qualities (salt, acid, sweet, or bitter). This specificity requires recognition between taste receptor cells and nerve fibers that may be mediated by surface markers correlating with function. In an effort to identify potential markers, we used immunofluorescence and confocal microscopy to examine expression of the oligosaccharide blood-group antigens Lewis(b), A, and H type 2 in taste buds of the rat oral cavity. We compared the distributions of these antigens with that of alpha-gustducin, a G-protein subunit implicated in responses to sweet- and **bitter-tasting** substances. The A and Lewis(b) antigens were present only on spindle-shaped cells whose apical processes reached the taste pore. These antigens were not present on epithelial cells surrounding taste buds, and Lewis(b) was not found elsewhere in the digestive tract. Lewis(b) and A were not removed by lipid extraction, suggesting that they are present on glycoproteins rather than glycolipids.
All Lewis(b)-positive cells expressed alpha-gustducin, but only a fraction of alpha-gustducin-positive cells expressed Lewis(b). The fraction of taste-bud cells expressing Lewis(b) decreased in the order: vallate papillae > foliate papillae > nasoincisor duct. The epiglottis had almost no taste-bud cells that expressed Lewis(b). The A antigen appeared on taste-bud cells that also expressed alpha-gustducin in the order: foliate and vallate papillae > nasoincisor duct and epiglottis > fungiform papillae. In addition, the A antigen was present on many cells that lacked alpha-gustducin in foliate and vallate papillae. In vallate papillae, cells expressed either A or Lewis(b), but not both. Lewis(b) appears to be restricted to differentiated light cells that also express alpha-gustducin and may be involved in intercellular interactions of these cells.

L17 ANSWER 7 OF 15 MEDLINE (Continued)

L17 ANSWER 8 OF 15 USPATFULL
ACCESSION NUMBER: 1998:122508 USPATFULL
TITLE: Gustducin polypeptides and fragments
INVENTOR(S): Margolskee, Robert F., Upper Montclair, NJ, United States
PATENT ASSIGNEE(S): Linguagen Corporation, Basking Ridge, NJ, United States
(U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5817759		19981006
APPLICATION INFO.:	US 1995-407804		19950320 (8)

RELATED APPLN. INFO.: Continuation of Ser. No. US 1993-45801, filed on 8 Apr 1993, now abandoned which is a continuation-in-part of Ser. No. US 1992-868353, filed on 9 Apr 1992, now abandoned
DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Jagannathan, Vasu S.
ASSISTANT EXAMINER: Carlson, K. Corhrane
LEGAL REPRESENTATIVE: Marshall, O'Toole, Gerstein, Murray & Borun
NUMBER OF CLAIMS: 3
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 2 Drawing Figure(s); 2 Drawing Page(s)
LINE COUNT: 1239
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A novel taste cell specific guanine nucleotide binding protein, gustducin, is disclosed as well as polynucleotide sequences encoding the .alpha. subunit of gustducin. Also disclosed are methods of modifying taste involving agents that inhibit or activate the gustducin .alpha. subunit, methods for identifying such taste modifying agents and various taste modifying agents.

L17 ANSWER 9 OF 15 MEDLINE
ACCESSION NUMBER: 1998198863 MEDLINE
DOCUMENT NUMBER: 98198863 PubMed ID: 9539456
TITLE: Gustducin and its role in taste.
AUTHOR: Spielman A I
CORPORATE SOURCE: New York University College of Dentistry, Basic Science Division, New York 10010, USA.
SOURCE: JOURNAL OF DENTAL RESEARCH, (1998 Apr) 77 (4) 539-44. Ref: 36
Journal code: HYV; 0354343. ISSN: 0022-0345.
PUB. COUNTRY: United States
Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
(REVIEW, TUTORIAL)
LANGUAGE: English
FILE SEGMENT: Dental Journals; Priority Journals
ENTRY MONTH: 199804
ENTRY DATE: Entered STN: 19980430
Last Updated on STN: 20000303
Entered Medline: 19980421
AB The mechanisms responsible for taste signal transductions are very complex. A key molecule, alpha-gustducin, a primarily taste-specific G protein alpha-subunit, was discovered in 1992 and was later found to be involved in both bitter and sweet taste transduction. A proposed mechanism for alpha-gustducin involves coupling specific cell-surface receptors with a cyclic nucleotide phosphodiesterase which would open a cyclic nucleotide-suppressible cation channel leading to influx of calcium, and ultimately leading to release of neurotransmitter. Although "knock-out" animals deficient in the alpha-gustducin gene clearly demonstrate that gustducin is an essential molecule for tasting certain bitter and sweet compounds, the precise role of alpha-gustducin in bitter and sweet taste is presently unclear. Indeed, there are several other signaling mechanisms in sweet and bitter taste, apparently unrelated to alpha-gustducin, that increase cyclic AMP or inositol 1,4,5 trisphosphate. Thus, proposed models for alpha-gustducin and those found by other laboratories may be parallel and interdependent.

L17 ANSWER 10 OF 15 USPATFULL
ACCESSION NUMBER: 97:106951 USPATFULL
TITLE: Gustducin polynucleotides, vectors, host cells and recombinant methods
INVENTOR(S): Margolskee, Robert F., Upper Montclair, NJ, United States
PATENT ASSIGNEE(S): Linguagen Corporation, Basking Ridge, NJ, United States
(U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5688662		19971118
APPLICATION INFO.:	US 1992-868353		19920409 (7)

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Jagannathan, Vasu S.
ASSISTANT EXAMINER: Carlson, K. Cochrane
LEGAL REPRESENTATIVE: Marshall, O'Toole, Gerstein, Murray & Borun
NUMBER OF CLAIMS: 5
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 5 Drawing Figure(s); 5 Drawing Page(s)
LINE COUNT: 1033
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A novel taste cell specific guanine nucleotide binding protein, gustducin, is disclosed as well as polynucleotide sequences encoding the .alpha. subunit of gustducin. Also disclosed are methods of modifying taste involving agents that inhibit or activate the gustducin .alpha. subunit, methods for identifying such taste modifying agents and various taste modifying agents.

L17 ANSWER 11 OF 15 MEDLINE
ACCESSION NUMBER: 97248665 MEDLINE
DOCUMENT NUMBER: 97248665 PubMed ID: 9092606
TITLE: Differential expression of alpha-gustducin in taste bud populations of the rat and hamster.
AUTHOR: Boughter J D Jr; Pumplin D W; Yu C; Christy R C; Smith D V
CORPORATE SOURCE: Department of Anatomy and Neurobiology, University of Maryland School of Medicine, Baltimore, Maryland 21201-1509, USA.
CONTRACT NUMBER: DC00347 (NIDCD)
SOURCE: JOURNAL OF NEUROSCIENCE, (1997 Apr 15) 17 (8) 2852-8.
Journal code: JDF; 8102140. ISSN: 0270-6474.
PUB. COUNTRY: United States
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199704
ENTRY DATE: Entered STN: 19970507
Last Updated on STN: 20000303
Entered Medline: 19970428
AB The G-protein subunit alpha-gustducin, which is similar to rod transducin, has been implicated in the transduction of both sweet- and bitter-tasting substances. In rodents, there are differences in sensitivity to sweet and bitter stimuli in different populations of taste buds. Rat fungiform taste buds are more responsive to salts than to sweet stimuli, whereas those on the palate respond predominantly to sweet substances. In contrast, hamster fungiform taste buds are more sensitive to sweet-tasting stimuli. Taste buds in the vallate and foliate papillae of both species are sensitive to bitter compounds. These differences in sensitivity should be reflected in the numbers of gustducin-containing cells in different taste bud populations. We examined taste buds in the rat and hamster for immunoreactivity to an antibody against alpha-gustducin. Immunofluorescence of labeled taste cells was examined by confocal microscopy, and the cells were counted. Gustducin-positive cells were seen in all taste bud regions; they were spindle-shaped, with circular cross-sections and apical processes that extended to the taste pore. Cells with this characteristic shape in rat vallate taste buds are Type II (light) cells. In the rat, taste buds of the fungiform papillae had fewer gustducin-positive cells (3.1/taste bud) than those of other regions, including the posterior tongue and palate (>8.9/taste bud). Hamster fungiform taste buds contained twice as many gustducin-expressing cells (6.8/taste bud) as those of the rat. These data support the hypothesis that alpha-gustducin is involved in the transduction of both sweet- and bitter-tasting stimuli by mammalian taste receptor cells.

L17 ANSWER 12 OF 15 MEDLINE
ACCESSION NUMBER: 96267008 MEDLINE
DOCUMENT NUMBER: 96267008 PubMed ID: 8657284
TITLE: Transduction of bitter and sweet taste by gustducin.
COMMENT: Comment in: Nature. 1996 Jun 27;381(6585):737-8
Erratum in: Nature 1996 Oct 10;383(6600):557
AUTHOR: Wong G T; Gannon K S; Margolskee R F
CORPORATE SOURCE: Department of Physiology and Biophysics, Mount Sinai School
of Medicine, New York 10029, USA.
SOURCE: NATURE, (1996 Jun 27) 381 (6585) 796-800.
Journal code: NSC; 0410462. ISSN: 0028-0836.
PUB. COUNTRY: ENGLAND: United Kingdom
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199608
ENTRY DATE: Entered STN: 19960808
Last Updated on STN: 20000303
Entered Medline: 19960801

AB Several lines of evidence suggest that both sweet and **bitter tastes** are transduced via receptors coupled to heterotrimeric guanine-nucleotide-binding proteins (G proteins). Gustducin is a taste receptor cell (TRC)-specific G protein that is closely related to the transducins. Gustducin and rod transducin, which is also expressed in TRCs, have been proposed to couple bitter-responsive receptors to TRC-specific phosphodiesterases to regulate intracellular cyclic nucleotides. Here we investigate gustducin's role in taste transduction by
generating and characterizing mice deficient in the gustducin alpha-subunit (alpha-gustducin). As predicted, the mutant mice showed reduced behavioural and electrophysiological responses to bitter compounds, whereas they were indistinguishable from wild-type controls in their responses to salty and sour stimuli. Unexpectedly, mutant mice also exhibited reduced behavioural and electrophysiological responses to sweet compounds. Our results suggest that gustducin is a principal mediator of both bitter and sweet signal transduction.

L17 ANSWER 13 OF 15 EMBASE COPYRIGHT 2001 ELSEVIER SCI. B.V.
ACCESSION NUMBER: 95209727 EMBASE
DOCUMENT NUMBER: 1995209727
TITLE: Coupling of bitter receptor to phosphodiesterase through transducin in taste receptor cells.
AUTHOR: Ruiz-Avila L.; McLaughlin S.K.; Wildman D.; McKinnon P.J.; Robichon A.; Spickofsky N.; Margolskee R.F.
CORPORATE SOURCE: Roche Institute of Molecular Biology, Roche Research Center, Hoffmann-La Roche Inc.,Nutley, NJ, United States
SOURCE: Nature, (1995) 376/6535 (80-85).
ISSN: 0028-0836 CODEN: NATUAS
COUNTRY: United Kingdom
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 011 Otorhinolaryngology
029 Clinical Biochemistry
LANGUAGE: English
SUMMARY LANGUAGE: English

AB The rod and cone transducins are specific G proteins originally thought to
be present only in photoreceptor cells of the vertebrate retina. Transducins convert light stimulation of photoreceptor opsins into activation of cyclic GMP phosphodiesterase. A transducin-like G protein, gustducin, has been identified and cloned from rat taste cells. We report here that rod transducin is also present in vertebrate taste cells, where it specifically activates a phosphodiesterase isolated from taste tissue. Furthermore, the bitter compound denatonium in the presence of taste-cell membranes activates transducin but not Gi. A peptide that competitively inhibits rhodopsin activation of transducing also blocks taste-cell membrane activation of transducin, arguing for the involvement of a seven-transmembrane-helix G-protein-coupled receptor. These results suggest that rod transducin tranduces **bitter taste** by coupling taste receptor(s) to taste-cell phosphodiesterase. Phosphodiesterase-mediated degradation of cyclic nucleotides may lead to taste-cell depolarization through the recently identified cyclic-nucleotide-suppressible conductance.

L17 ANSWER 14 OF 15 EMBASE COPYRIGHT 2001 ELSEVIER SCI. B.V.
ACCESSION NUMBER: 94064991 EMBASE
DOCUMENT NUMBER: 1994064991
TITLE: Some taste substances are direct activators of G-proteins.
AUTHOR: Naim M.; Seifert R.; Nurnberg B.; Grunbaum L.; Schultz G.
CORPORATE SOURCE: Institut fur Pharmakologie, Freie Universitat Berlin,D-14195 Berlin, Germany
SOURCE: Biochemical Journal, (1994) 297/3 (451-454).
ISSN: 0264-6021 CODEN: BIJOAK
COUNTRY: United Kingdom
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 011 Otorhinolaryngology
029 Clinical Biochemistry
LANGUAGE: English
SUMMARY LANGUAGE: English

AB Amphiphilic substances may stimulate cellular events through direct activation of G-proteins. The present experiments indicate that several amphiphilic sweeteners and the **bitter tastant**, quinine, activate transducin and G(i)/G(o)-proteins. Concentrations of taste substances required to activate G-proteins in vitro correlated with those used to elicit taste. These data support the hypothesis that amphiphilic taste substances may elicit taste through direct activation of
G-proteins.

L17 ANSWER 15 OF 15 MEDLINE
ACCESSION NUMBER: 94221912 MEDLINE
DOCUMENT NUMBER: 94221912 PubMed ID: 8168377
TITLE: Gustducin and transducin: a tale of two G proteins.
AUTHOR: McLaughlin S K; McKinnon P J; Robichon A; Spickofsky N; Margolskee R F
CORPORATE SOURCE: Roche Research Center, Roche Institute of Molecular Biology, Nutley, NJ 07110-1199.
SOURCE: CIBA FOUNDATION SYMPOSIUM, (1993) 179 186-96; discussion 196-200. Ref: 27
Journal code: D7X; 0356636. ISSN: 0300-5208.
PUB. COUNTRY: Netherlands
Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
(REVIEW, TUTORIAL)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199406
ENTRY DATE: Entered STN: 19940613
Last Updated on STN: 20000303
Entered Medline: 19940601

AB In the vertebrate taste cell, heterotrimeric guanine nucleotide-binding proteins (G proteins) are involved in the transduction of both bitter and sweet taste stimulants. The bitter compound denatonium raises the intracellular Ca2+ concentration in rat taste cells, apparently via G protein-mediated increases in inositol trisphosphate. Sucrose causes a G protein-dependent generation of cAMP in rat taste bud membranes; elevation
of cAMP levels leads to taste cell depolarization. To identify and characterize those proteins involved in the taste transduction process, we
have cloned G protein alpha subunit (G alpha) cDNAs from rat taste cells. Using degenerate primers corresponding to conserved regions of G proteins,
we used the polymerase chain reaction to amplify and clone taste cell G alpha cDNAs. Eight distinct G alpha cDNAs were isolated, cloned and sequenced from a taste cell library. Among these clones was alpha gustducin, a novel taste G alpha closely related to the transducins. In addition to alpha gustducin, we cloned rod and cone transducins from taste
cells. This is the first identification of transducin expression outside photoreceptor cells. The primary sequence of alpha gustducin shows similarities to the transducins in the receptor interaction domain and the
phosphodiesterase activation site. These sequence similarities suggest that gustducin and transducin regulate taste cell phosphodiesterase, probably in **bitter taste** transduction.